

Calc 1

Test 1 Review

**Solve for x. Show answers on number line and in interval notation:**

1.  $4(2x - 5) - 6x < 4$

2.  $-3(4x - 7) + 9x \geq 39$

3.  $\frac{-2x+7}{-5} \leq -3$

4.  $-12 \leq 4x - 8 < 20$

5.  $7 < -2x + 11 < 19$

6.  $x^2 - 7x \geq 18$

7.  $5x^2 + 11x + 30 < 4x^2$

8.  $x^3 - 5x^2 - 24x > -3x^2$

9.  $\frac{3x-12}{x+5} > 0$

10.  $\frac{20}{3x} \leq 2$

11.  $|3x + 8| \geq 7$

12.  $|2x - 3| < 11$

13.  $\left| \frac{4}{x} + 5 \right| > 2$

14.  $\left| 3 - \frac{7}{x} \right| < 1$

15.  $|2x + 5| \leq |x - 4|$

16.  $|2x + 1| > |x + 3|$

**Find the equation of the line that fits the following descriptions. Show the equation in 3 different forms.**

17. Passes through the points (4, 7) and (2, 5).

18. Passes through the points (4, 3) and (-12, -1).

19. Is parallel to the line  $3x - 4y = 8$  and passes through the point (12, -7).

20. Is parallel to the line  $4x + 10y = 64$  and passes through the point (10, 2).

21. Is perpendicular to the line  $-2x - 8y = 32$  and passes through the point (-5, 1).

22. Is perpendicular to the line  $9x + 6y = 12$  and passes through the point (9, -1).

**State the domain and range and tell if the relation is a function or not:**

23.  $y = \sqrt{x+2}$

23.

x	1	3	5	3	7
y	2	4	6	8	10

24. if  $f(x) = \frac{x}{3} + x^2$ , find  $f(6)$ ,  $f(-3)$ ,  $f(0)$  and  $f(1)$ .

**For numbers 25 – 30,  $(x) = \frac{-9}{x+2}$ ;  $g(x) = x^2 + 5$  and  $h(x) = x - 1$**

25.  $f(h(x))$

26.  $g(h(x))$

27.  $h(g(x))$

28.  $f(g(x))$

29.  $h(f(x))$

30.  $g(h(3))$

**Sketch a graph for each of the following:**

31.  $y = (x - 3)^2 + 2$

32.  $y = |x + 4| - 5$

33.  $y = x^2 + 6x + 5$

**Find the vertical and horizontal or slant asymptotes for each of the following. Find any x value for which the graph has a hole:**

34.  $y = \frac{x+3}{x^2-5x-14}$

35.  $f(x) = \frac{2x^3 - 4x^2 - 30x}{x^3 + 7x^2 + 12x}$

36.  $y = \frac{x^2+4x+12}{x-2}$